Relativistic Heavy Ion Collider
Magnet Division Procedure

Proc. No.: RHIC-MAG-R-7306

Issue Date: May 22, 1989

Rev. No.: A

Rev. Date: May 29, 1992

Class: Electrical Testing
Title: RHIC High Precision Resistance Insulation Test

- Cognizant Engineer: Signature on File
  BNL Magnet Division
- Approved by: Signature on File
  Head, Electrical Systems Section,
  BNL Magnet Division

REVISION RECORD

Rev. No.	Date	Page	Subject	Approval
A	5/29/92		Initial Release	

1. Scope:

This procedure describes the method of using a high precision Giga-Ohmmeter or Digital Volt Meter for low voltage insulation tests. This test is typically used for insulation tests where the component under test cannot withstand a 1kV Megger or hypot test.

2. Applicable Documents:

Equipment Manufacturers Instruction/Operation Manual(s).

3. Requirements:

Data Sheet - RHIC High Precision Resistance Insulation Test.

3.1 Equipment:

Suitable 6-1/2 digit Digital Volt Meter. Basic accuracy, 0.005%, DC.
Maximum resistance (or O.L. - "Over Load"): 1.0 Gigaohms or greater.
(Typical meter model: HP 3457A or equivalent).

3.2 Procedure:

3.2.1 Basic Ohmmeter operation. (Also see manufacturers manual):

3.2.1.1 Turn unit on. Self check OK. All display segments OK.

3.2.1.2 Select lowest two-wire resistance range.

3.2.1.3 Short probes together. Verify that meter reads 0 or < 1 Ohm.

3.2.1.4 Select highest two-wire resistance range.
Short probes. Verify reading of 0.
Open circuit probes. Verify O.L. or > 1.0 Gigaohm reading.

3.2.2 High resistance measurement or insulation test:

3.2.2.1 Perform OHMS AUTOCAL operation before using extended (Gigaohm) range.

3.2.2.2 Select highest two-wire resistance range (or auto).

3.2.2.3 Momentarily short probes together to verify operation.

3.2.2.4 Connect probes across circuit to be measured and read resistance value or verify O.L. or > 1.0 Gigaohm reading. Record resistance on data sheet.

3.2.2.5 Disconnect probes from circuit.

4. Quality Assurance Provisions:

4.1 The Quality Assurance Provisions of this procedure requires compliance with the procedural instructions contained herein and the recording of test results on the attached data sheet.

5. Preparation for Delivery:

N/A

DATA SHEET

RHIC High Precision Resistance Insulation Test

Magnet No. _____.

Coil No. _____.

Measured Resistance _____ Ω.

Above work done by:

Comments: _____

_____

Name & Life No., Date

_____

_____

List of Equipment Used for Measurements

Nomenclature	Manufacturer	Model	Serial No.	BNL Bar Code
Remarks:				